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AUTHOR Scribner, Jay Paredes
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ABSTRACT

This study examined teachers' professional development experiences through the lenses of personal teaching efficacy and professional learning. Initially, 45 academic teachers from three public urban high schools were selected to participate based on their reputations as excellent teachers and their core academic content areas. These teachers were then asked to identify five peers believed to be excellent teachers. They completed the personal teaching efficacy (PTE) scales, and 10 teachers with the highest PTE and 10 teachers with the lowest PTE were selected for analysis. Teachers completed in-depth, semi-structured, and open-ended interviews to offer perspective on their professional development experiences. Observations of professional development activities also occurred. Data analysis indicated that level of personal teaching efficacy influenced how and in what ways individual teachers experienced professional development. Teachers were eager to engage or not engage in professional development for different reasons. Teachers with high and low PTE described the relationship between their work contexts and their professional development experiences very differently. The two groups described uses of knowledge in different ways. The types of knowledge teachers acquired and used contributed to the manner in which they approached their work. (Contains 43 references.) (SM)

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Teacher efficacy and teacher professional learning:

What school leaders should know

Jay Paredes Scribner

University of Missouri, Columbia

Paper presented at the annual convention of the University Council for Educational Administration, St. Louis, MO

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Abstract

This study examines teachers' professional development experiences through the lenses of personal teaching efficacy and professional learning. From a purposively selected group of 45 teachers, this study examined the professional development experiences of teachers with the ten highest and ten lowest levels of personal teaching efficacy according to the Gibson and Dembo Teacher Efficacy Scale. The study found that level of personal teaching efficacy influences how and in what ways individual teachers experience professional development. The findings of this study strengthen assertions for approaches to professional development that address individual teacher needs and lead to recommendations for how schools can establish professional learning environments that influence teachers' efficacy beliefs positively.

Teacher efficacy and professional learning perspectives:
What school leaders should know

Purpose and Research Questions

The 1990s have heard repeated calls from educational policy makers and practitioners for more effective approaches to teacher learning (Corcoran, 1995; Houghton & Goren, 1995). In spite of the acknowledgement that approaches to teacher learning must, and in some cases, are changing, myriad individual and organizational factors that influence teacher learning remain unexplored and little understood (Darling-Hammond & McLaughlin, 1995; Lieberman, 1995). As Eraut (1994) states:

> Very little is known about how in-service teachers learn, and to what extent continuing on-the-job or even off-the-job learning contributes to their professional maturation, updating, promotion, or reorientation. Yet without such knowledge, attempts to plan or evaluate professional education are liable to be crude and misdirected (p. 40).

To heed Eraut's warning will require a deeper, empirically based knowledge of the complex phenomenon of teacher learning.

What we know now is that recent empirical and theoretical works suggest that teachers define professional development broadly in terms of a range of formal and informal learning activities (Scribner, in press; Smylie, 1989); professional development should be designed to meet individual and organizational needs (Corcoran, 1995; Houghton & Goren, 1995); and professional development should be embedded into the culture of schools (Fullan, 1995; Scribner, in press). For example, teachers tend to value and use informal activities such as reading

professional journals and books as a strategy to address perceived deficits in subject matter knowledge or pedagogical skill.

Beyond the individual exigencies of professional learning that teachers face, other authors have cited a need for professional development to become incorporated into the everyday activities of school-based educators (Bredeson & Scribner, 1997; Fullan, 1993; Fullan, 1995; Joyce, 1990; Scribner, 1997; Stallings & Krasavage, 1986). These authors have argued that even when professional development is successful at the individual level, its effects will not have long term staying power if teachers are not supported in ways that promote the application of new knowledge in schools and classrooms and the sharing of knowledge between colleagues. For example, as Corcoran (1995) and Houghton and Goren (1995) have argued, state and district policies—both directly and indirectly related to professional development—must be examined to ensure that they support teacher learning at the school and classroom levels.

In the past, the staple of empirical work on professional development has been either narrow evaluations of staff development programs (e.g., Bredeson & Scribner, 1996; Little, 1995; Sparks, 1986; Stallings & Krasavage, 1986) or broad studies of staff development resource allocations (e.g., Miller & Lord, 1994; Monk & Brent, 1994; Orlich & Evans, 1990; Stern, Gerritz, & Little, 1989). However, as practitioners, researchers, and policy makers increasingly agree on the need for empirically-based studies that inform how best to link professional development policy across educational levels, these efforts would be well served by an understanding of how the targets of those policies—teachers—experience professional development on a daily basis.

Consequently, this study addresses the void in empirically based knowledge on teacher learning by examining the relationship between a teacher's sense of efficacy and professional development experiences in three U.S. high schools. By comparing two groups of teachers—those who scored high or low on a teacher efficacy scale—this study addresses three fundamental questions: 1) why do teachers engage in professional development; 2) how does work context influence teachers' professional development experiences; and 3) how do teachers use the professional knowledge they acquire? This study also examines the implications that knowledge about the relationship between individual teacher characteristics—like efficacy—and professional development can have for school administrators, teacher leaders, and others charged with creating work environments that foster professional learning.

Theoretical Frameworks

This study is framed in two ways. First, to operationalize professional development, I outline a theoretical lens based on professional learning. Second, I discuss personal teaching efficacy and describe its usefulness as a construct to increase our understanding of teachers' professional development experiences.

Professional Learning

Corcoran (1995) defines professional development as "the full range of activities that affect how teachers learn how to teach and how they mature intellectually and professionally" (p. 1). Researchers have theorized that professional learning—arguably the expected outcome of professional development—is influenced by: 1) the context in which the learning occurs (Eraut, 1994); 2) factors that motivate individual engagement in learning activities (Farr &

Middlebrooks, 1990; Willis & Tosti-Vasey, 1990); and 3) the use of knowledge in practice (Broudy, 1988; Eraut, 1994).

Contexts of learning. Three work contexts play a significant role in determining how and what teachers learn. According to Eraut (1994), the academic context is found in all professions and typically generates theoretical knowledge communicated through specialized language. For teachers this includes knowledge of curriculum development, subject matter, and learning acquired during, for example, teacher preparation programs or graduate courses. School context is the organizational environment unique to teachers and other school-based stakeholders that generates knowledge of organizational norms. The third and predominant context for teachers is the *hot action* of the classroom where teachers must make critical decisions quickly with minimal time to reflect on past knowledge or memory and in a profession filled with ambiguity and uncertainty (Eraut, 1994). Unlike most other professional work contexts, the "here-and-now urgency" (Jackson, 1968, p.119) and spontaneous quality of classroom teaching has important consequences for acquisition and use of professional knowledge. While teachers may not have daily contact with each of these contexts, they represent the nested environment within which teacher's work.

Motivation to learn. A sea of literature on adult learning exists and some describes adults' motivations to learn. However, scant research is available to inform what motivates *professionals* to learn in their field. Existing research suggests that professionals either tacitly or consciously engage in a "process of allocating personal resources (e.g., time and energy) to maximize anticipated outcomes" (Farr & Middlebrooks, 1990, p. 195). However, while Farr and Middlebrooks focus attention on individual factors that influence motivation to learn, others have

focused attention on the role workplace factors play in individual motivation to professionally update (Cervero, 1988; Willis & Tosti-Vasey, 1990). Together, these two bodies of research suggest that rather than acting directly on the individual's motivation to update knowledge and skills, contextual factors influence the individual's beliefs "about the efficacy and utility of updating for obtaining valued outcomes. These beliefs then influence motivation...." to learn (Farr & Middlebrooks, 1990, p. 199). At least five workplace factors influence professionals' motivation to professionally update, either positively or negatively: supervisory behavior, peer interactions, work assignments, management policy, and organizational climate (Farr & Middlebrooks, 1990; Valentine & Darkenwald, 1990).

Use of professional knowledge. In addition to examining how teachers negotiate their work contexts and the factors that motivate their engagement in professional learning, how teachers use professional knowledge is a critical part of the professional development experience. Broudy's (1988) knowledge-use typology is enlightening here. Broudy describes four modes of knowledge use: replicative, applicative, interpretive, and associative. Replicative uses of knowledge are often associated with knowledge received didactically and used rotely. While many staff development programs were at least implicitly founded on assumptions that rote learning would be remembered and later used, in fact the acquisition of replicative knowledge rarely guarantees future use, especially in highly demanding contexts such as teaching (Eraut, 1994). Application reflects a "process of knowledge use that requires both an understanding of principle and the availability of procedures that can be replicated with skill" (Broudy, 1988, p. 14). Translated into the professional setting, an individual is able to apply theoretical knowledge to decisions in practice through, for instance, the use of analogies. However, Broudy argues that

while replication and application have guided professional development program goals over several decades, there is little evidence to support that these types of uses lead to improved professional competence.

Broudy (1988) argues further of the need to develop an "allusionary base" predicated on interpretive and associative uses of knowledge. Interpretative uses of knowledge are indirectly observable through the repertoire of concepts, images, understandings and judgments, founded on "a wealth of professional experience" (Eraut, 1994, p. 49). As Eraut describes, interpretive knowledge—acquired primarily experientially—typically accumulates unreflectively, limiting its usefulness across contexts. Associative uses of knowledge, on the other hand, provide the vehicle to carry interpretive knowledge reflectively across learning contexts. Associative modes reflect an intuitive understanding resulting from the distillation of experience and the ability "to select from it those ideas or procedures that seem fitting or appropriate" to other situations (Eraut, 1994, p. 49). Associative uses of knowledge often manifest themselves metaphorically or analogously. Thus, "[t]he associative resources provided by schooling and experience plus the interpretive repertoire of concepts and images would constitute the allusionary base" (Broudy, 1988, p. 21).

Personal Teaching Efficacy

Teaching efficacy—which has developed into the two constructs of personal and general teaching efficacy—fits under the broader umbrella of self efficacy, a theory developed by Albert Bandura (Bandura, 1986; Bandura, 1995). Personal teaching efficacy (PTE) refers to teachers' beliefs that they can influence student learning, while general teaching efficacy measures teachers' beliefs in the capacity of teaching to reach difficult students (Ashton & Webb, 1986; Hipp

& Bredeson, 1995; Hoy & Woolfolk, 1993). This study is concerned specifically with individual teachers' professional development experiences; thus only PTE is used as a construct to distinguish between teachers.

Broadly, the construct of self efficacy is useful as a predictor of the potential for individual behavioral change (Bandura, 1995; McLaughlin, 1991; Ross, 1995; Smylie, 1988). Smylie (1988) described why this particular construct is important when applied to teachers, "In short, research suggests that teachers are more likely to adopt and implement new classroom strategies if they have confidence in their own ability to control their classrooms and affect student learning" (p. 6). Smylie suggests that teacher efficacy—specifically PTE—may act as "a professional filter through which new ideas and innovations must pass before teachers internalize them and change their behaviors...." (p. 148).

According to Bandura (1995), four factors influence a person's efficacy beliefs: 1) *mastery learning*, which involves mastering tools and processes that allow competency to manage ever-changing life circumstances" (p. 3); 2) *vicarious experiences*, like modeling, that focus on successful practice; 3) *social persuasion*, the result of positive support and encouragement from others; and 4) *psychological and emotional states* that influence individuals' attitude, mood, and ability to cognitively process information in ways that affects levels of effectiveness.

Insert Figure 1 here

As Figure 1 shows, Bandura also theorized that perceived efficacy manifests itself in four processes of human functioning: cognitive, affective, motivational, and selection. For instance, a person's ability to recognize and act on controllable aspects of their lives in highly intense and

demanding environments (such as teaching) requires an ability to *cognitively* process information from many sources. It also requires *affective* processes that encourage perspectives on perceived threats that enable continued focus on the task at hand and the ability to persevere through difficult times. *Motivationally*, efficacy beliefs determine what a person believes they are able to accomplish and thus the effort and time they should spend accomplishing certain goals. Finally, to varying degrees individuals are able to *select* their environments. That is, highly efficacious individuals seek experiences and situations that challenge their capabilities and often lead to personal and professional growth (Bandura, 1995). Bandura states that, "such an efficacious outlook fosters intrinsic interest and deep engrossment in activities" (p. 11). Thus, by using PTE as a theoretical lens we can gain critical insights into how different teachers experience professional development, and understand the implications that those varying experiences have for the organization of professional development in teachers' daily work lives.

In summary, the theoretical framework for this study rests primarily on the construct of personal teaching efficacy as a way to differentiate and understand teachers' varying professional development experiences. Furthermore, as an analytical aid, I rely on professional learning theory defined by the role of work context, factors that motivate professionals to learn, and modes of knowledge used to "see" these differences between teachers' professional development experiences, if and where they exist.

Research Method and Design

This study, derived from a larger research effort, employs a mixed method approach to 1) identify teachers from three urban public high schools according to levels of personal teaching efficacy; and 2) explain the relationship between teacher efficacy and professional development

experiences. Congruent with the purposes of this study, I used a constructivist method of inquiry to conduct an investigation of teacher professional development experiences. This qualitative approach rests on the assumptions that knowledge and experiences are socially constructed and shared through language and symbols and adapted to meet individual needs and intents (Gergen & Gergen, 1991; Schwandt, 1994). In addition, a quantitative measure—the Teacher Efficacy Scale (Gibson & Dembo, 1984)—was used to identify efficacy levels. The Teacher Efficacy Scale is a 16 item Likert scale survey with a range of possible responses between 1 (strongly disagree) and 6 (strongly agree).

Participant Selection

Given the exploratory and inductive nature of this study, theoretical sampling of participants was achieved using snowball and purposive sampling techniques (Bogdan & Biklen, 1998). Initially, 45 academic teachers from three public high schools in the same urban district were selected according to several criteria. First, the majority of teachers (n=30) were selected based on their reputations for being excellent teachers. Second, teachers were selected in order to achieve representation of the core academic content areas (e.g. math, science, language arts, and foreign languages), level of experience, and gender. Excellent teachers were selected by first obtaining administrator recommendations. These teachers were then asked to identify five peers believed to be excellent teachers until interviewee lists became redundant. Academic teachers consistently appearing on principal and peer lists were interviewed.

In this study, only the highest and lowest PTE teachers were selected for analysis. Along both dimensions of the PTE scale, data from the top and bottom 10 teachers were used in the data

analysis. Table 1 shows the means and standard deviations of the PTE measures for teachers with the 10 highest and 10 lowest scores, and for all 45 teachers.

Table 1: Means and Standard deviations of teachers' personal teaching efficacy measures

Group/Subgroup	Mean	Standard Deviation
Highest PTE (n=10)	5.09	.22
Lowest PTE (n=10)	3.05	.47
All teachers (N=45)	4.20	.83

Site Selection

This study was conducted in a large urban district in the US. Fifteen teachers were selected from three of the district's high schools. Sustained access and potential richness of experiences were the primary criteria for selecting the district and case schools. Similar to other urban school districts, the district from which teachers were selected faces a declining economic base. The district serves approximately 106,000 students in over 150 schools. The racial and ethnic make up of the school district is: 59% African American, 24% White, 11% Latino, 4% Asian American, and 1% Native American. Approximately 65% of the district's students qualify for the free and reduced lunch program. Each of the high schools is of similar size with predominantly minority student populations, predominantly white teaching staff, high student mobility rates, and a large proportion of students eligible for the free and reduced lunch program.

Data Collection

In order to gain insight into teachers' perspectives on their professional development experiences, in-depth, semi-structured, and open-ended interviews were used as the principal strategy to capture phenomena in teachers' own words (Bogdan & Biklen, 1998). Interviews were developed and continuously honed to ensure rich descriptions of issues relevant to the study (Glesne & Peshkin, 1992). Interviews ranged from 30 minutes to two hours, were audio recorded, and transcribed verbatim. On twelve occasions, observations of professional development activities provided insight into teacher learning experiences in a variety of contexts. Observations were conducted unobtrusively to understand "the research setting, its participants and their behavior" (Glesne & Peshkin, 1992, p. 42).

Data Analysis

After segregating data by 10 highest and lowest PTE scores, narrative responses to interview questions were analyzed using the constant comparative method (Glaser & Strauss, 1967). This inductive approach "blends systematic data collection, coding, and analysis with theoretical sampling into a comprehensive research strategy" (Haworth & Conrad, 1997, p. 221). While not strictly a linear process, textual data were analyzed using open, axial, and selective coding (Strauss & Corbin, 1990). During open coding, data were "fractured" into provisional categories representing emerging sub-phenomena that shed light on the nature of teacher learning and work. Properties (i.e., sub-categories) and their dimensions gave depth and meaning to the categories. Data were then "re-assembled" using axial coding techniques whereby categories and sub-categories were continuously compared to challenge and strengthen emerging categorical

relationships. The final stage, selective coding, involved determining the core category and describing its relation to the other categories.

Findings

According to the theoretical framework presented above, the following sections address how and why high and low PTE teachers engaged in professional learning activities. I discuss teachers' motivations to participate in professional learning activities and their perceptions of the influence of work context on those activities. In addition, I discuss the varied ways teachers sought to use professional knowledge.

Factors Motivating High and Low PTE Teachers

Motivational factors influenced teachers' perceptions of what and how much they could achieve and the time and effort they should expend to accomplish certain goals. Data suggested that the two teacher groups were motivated to engage (or not engage) in professional development for different reasons. These reasons were grouped according to intrinsic and extrinsic motivational factors. For instance, intrinsic factors such as a sense of moral obligation to both students and profession motivated teachers in each group to varying degrees. Extrinsic factors such as licensure requirements, remuneration, and district policy reforms also influenced teachers in each group differently.

High PTE Teachers. As literature on efficacy would predict, while focusing on the ever-changing and increasing demands facing their urban students, high PTE teachers' source of motivation to learn was primarily intrinsic. In other words, their reflection on their own professional practice was motivated by a professional obligation to their students as well as to the

teaching profession. Teachers' sense of professional obligation to their students was evident in this teacher's comment:

> I see kids as kids. I really do and I think that is my biggest frustration with this high school setting. In elementary school you're teaching kids; in middle school some people think you're teaching content; and in high school that is absolutely what they think they are teaching. But we <u>are</u> teaching kids.

Secondary intrinsic motivators included the need to develop content knowledge in their disciplines as well as pedagogical skills necessary to engage students in the learning process. In an effort to strengthen her ability to communicate content knowledge to students, this novice tenth grade science teacher described self-reliant and informal learning strategies, "I went to the library and found a text that I thought was more…that met the students' needs better. [The text] was visual, it explained well and along with that text I found a lot of supplements." In another instance, An English teacher described her individual efforts to solve problems related to connecting subject matter content with students' interests:

> If I want to do a project…in my literature class, I'll get out my Norton Anthology and just start looking and seeing what'll happen. I directed this play and it was about AIDS and grief and loss, and I found myself going through all the books that I have about grieving like for when my mom died. I started to pull together poems and I took that into the classroom—something I probably wouldn't have done but it was connecting with me and the kids were telling me stories that were out of this world. I mean the most obnoxious children who can't sit still for two minutes were writing these little stories, these little poems about things that meant a lot to them.

Extrinsic motivational factors also helped define teacher professional development experiences. The potential to advance on the district salary schedule, licensure requirements, and district reform initiatives each shaped teacher professional development experiences, albeit in different ways and to greater or lesser degrees. High PTE teachers rarely described salary advancement or licensure requirements as factors motivating their engagement in professional learning experiences, perhaps because they consider professional development to be broader than formal learning activities. In any case, these teachers generally saw district policy initiatives as factors that shaped and, indeed, created opportunities to learn. For example, some high PTE teachers described the district's reform efforts in the areas of science and math (through the National Science Foundations' Urban Systemic Initiatives), school-to-work, and site-based governance structures as rich learning opportunities. This teacher described how, like her high PTE peers, her involvement in a number of activities created a domino learning effect:

> I work with [the district] on performance based assessment. I was working with the National Urban Alliance on that. It deals with teaching strategies and performance based assessment which then led to the Joyce Foundation, which then led to all kinds of things, and as a team we became leaders in the school. Inservicing the faculty with strategies and performance based assessments which then led to [opportunities with a local university], which then led to...it keeps going on and on.

As the data suggest, these teachers were opportunistic in their approach to professional learning and they sought knowledge through their involvement in activities that often were not overtly professional development opportunities.

Low PTE teachers. In contrast, low PTE teachers were generally motivated to engage in professional development by the need to address problems external to themselves. That is, these teachers described professional development as a strategy to overcome "student problems" such as discipline and classroom management and social issues challenging students. This perspective was reflected in this veteran science teacher's comment:

> The students have changed [over time]. To think that you could come in and do that five days a week now would just not work. I think we have to look at society. Society has changed. They had TV back then but they didn't have all the other options. All the 154 channels and headsets and all of that. So I think the students have changed.

A novice teacher, seen by her peers to have a promising career, did not feel in control of her students in spite of her in-depth knowledge of computer science, "The thing that I'm working on the most that I think I'm getting better at is discipline. I think before I can even teach the kids anything, the room has to be in order. That's what I'm really focusing on this year is discipline."

Patterns in the data suggest that low PTE teachers were also more likely to discuss extrinsic motivating factors such as salary advancement and licensure requirements as reasons to engage in professional development, thus reflecting their perceptions of professional development as primarily a formal activity. For example, this beginning teacher described how the possibility for remuneration tied to participation in professional development activities was more important than the content of the activity, "Right now in my life it's sad to say, but it makes a big difference [whether professional development activities are] paid or unpaid because I have to pay for grad school."

Instead of opportunities to learn, district policies were seen as impediments to both teaching and learning by several of the low PTE teachers. For instance, low PTE teachers were typically not motivated to participate in reform efforts that focused on such initiatives as science and math initiatives and school governance. A history teacher captured this sentiment:

> This year [the district] changed the district goals and they not only changed the goals, but they also set [student] proficiency standards. So when setting the standards, how do you get all of the teachers involved in that process of writing an educational plan for the building. Well you mandate an inservice day for that. Then you mandate that it be done in the department on that day. Again, when you mandate, people say 'who the hell cares, I don't care what you come up with, just write anything.'

In general, low PTE teachers were unable or unwilling to engage in these reforms because of a perceived disconnect between the purposes of the efforts and their own needs as professionals.

Teachers Perceptions of work context and professional development experiences

Earlier I described the nested work contexts that can influence how and what teachers learn. One of the major propositions of self efficacy theory is that persons with high levels of efficacy quite often believe they can create opportunities that enhance goal achievement while low efficacy individuals allow their situations (i.e., their environment) to control them. As self efficacy theory predicts, high and low PTE teachers described the relationship between their work contexts and their professional development experiences quite differently. In general, teachers in both groups believed that schools and the *hot* action of the classroom were the work contexts that most shaped how and what they learned. Specifically, when asked what workplace factors enhanced or impeded their ability to learn professionally, teachers tended to discuss school level characteristics as most

important. The defining characteristic of the school context was the principal. Structural issues such as time and isolation played a secondary role. To a lesser degree, teachers identified district policy as a factor in their professional learning.

High PTE teachers. A striking difference between the two groups was teachers' perspectives of principals' roles played in shaping professional development experiences. High PTE teachers generally described a limited role for the school principal. One experienced teacher described her vision of what her school administration's role should be:

> [The principal] needs to create an atmosphere where you're treated like a professional; where you are recognized and appreciated for the education that you bring to the school. You need an administration that is challenging, that knows and believes in what it takes to educate a child—versus an administration that is burdened by the pressures of an outside force.

However, while high PTE teachers did not generally describe principals as proactive supporters of teacher professional development, several did identify less obvious principal actions that indirectly supported teacher professional development. For instance, similar to this teacher's comment, they favored a principal who listened to concerns about specific, highly contextual issues related to their classroom practice, or who discussed philosophical issues related to teaching in general.

> I've never been afraid to go to people and say look they're making me crazy. I know a really wonderful principal, and I can go to him and talk to him about anything. He never makes me feel like I was a bad teacher. And he has books all over his office about teaching. He had been a teacher for a long time so he knows his stuff.

High PTE teachers also appreciated being buffered from an onslaught of administrative duties and responsibilities—often originating from the school district—in order to engage in professional learning activities. In short, high PTE teachers preferred to rely on their own abilities to seek out relevant formal and informal professional development activities. In turn, teachers expected their principals to act as colleagues and to create environments that fostered a wide range of professional learning activities.

Structural elements of school and classroom contexts also played a role in determining how teachers experienced professional development. Specifically, two elements defined structure—time and isolation of teachers from colleagues. All teachers in the sample experienced fast paced and hectic work characteristic of large high schools. Not surprisingly, teachers also experienced feelings of isolation from their peers. While these structural issues affected how learning took place for all teachers interviewed, strategies to overcome these challenges to professional learning tended to differ between groups.

While high PTE teachers discussed challenges posed to learning by a lack of time, they also tended to discuss strategies to circumvent these constraints. These learning strategies consisted primarily of developing informal networks and engaging in outside activities (e.g., district level activities) as a vehicle through which to acquire and share valuable information around the margins of the "official" school day. For instance, this experienced teacher who had just received her business education certification and had joined an interdisciplinary team described how volunteering to work in a team broadened her learning opportunities:

> In English I had never worked on a team before....My [interdisciplinary] team has sat down and figured out our theme for the year and broke down the first couple weeks of

> school. And it really took a lot of the pressure off of me especially because it was my first time teaching it….Also, it is impossible for me to read everything in our content areas. I get my English journal every month. I get career magazines now. I cannot physically, possibly read all of the material. But I might see something that I can give to Maria to do in her class. So really just getting ideas and being able to share information and knowledge, it's unbelievably helpful.

Low PTE teachers. Contrary to the supportive and buffering role that high PTE teachers saw in their principals, low PTE teachers believed that their principals (the same principals of the high PTE teachers) were gatekeepers of professional development. According to the data, these teachers perceived this directive role as insulting at best, and misguided at worst. For instance, low efficacy teachers generally viewed their principals as controlling the focus of professional learning in their schools. As this teacher commented:

> I'd say the principal has tried to encourage people to get professional development—maybe to a fault. Like pushing them into areas they don't want to be pushed into. Whereas sometimes what teachers most need is to take a little break. To be able to catch up on their school work. It's not like working in an office. We have to teach a certain number of hours a day and try to work on our corrections and lesson planning around that.

Low PTE teachers also described principals as lacking awareness of teacher learning needs and channeling professional development resources into principals' pet projects such as block scheduling, instead of activities that addressed "real" teacher needs such as classroom

management. A teacher described her principal's efforts to institute block scheduling, which had been the focus of several all day school in-services:

> This is one of those times where you have to say well we're dealing with human beings and there is two sides to the story. And the principal may think that block scheduling is definitely the way to go and maybe from her perspective it is the way to go, but maybe from classroom teacher perspective it isn't. In the end we're going to come down to a vote and the majority is going to rule here and that is going to be the end of it I think. I think there has to be some give and take.

Another teacher described her belief that professional development activities were being used against them, not for them:

> Last year, feeling the pressure to be on some kind of committee dealing with blocking scheduling, I went to one. I exchanged ideas with people, but after awhile I felt that people are really pushing this as if it's going to happen. They are not open to the possibility that we might discuss it and find that maybe it's not worth trying. Tomorrow we're going to have this discussion and...hopefully without the administration being there, teachers can just exchange opinions honestly.

Low PTE teachers' responses to environmental constraints such as time and isolation differed from high PTE teachers in several important ways. In response to time constraints on their own learning, low PTE teachers tended to rely on individualistic learning strategies. The predominant strategy in this case was trial and error in the classroom. Experienced teachers believe that this strategy worked well for them. For instance, a social studies teacher described how the lack of time negatively influences her ability to engage in learning:

> I do believe that sharing with my peers is very important. Other teachers have insights that can be equally as valid as what you find in a book or classroom. I would like to see more of learning that way. I think teachers have a lot of successful techniques but we don't have time to observe it, share it, talk about it. I don't know how you get that time in the day to do that.

Further, these teachers' reactions to the consequences of lack of time suggested that their perceptions of professional development were narrower than their high PTE counterparts. When asked to describe how she approached her own learning a veteran history teacher said, "So if I do an inservice for myself it's usually in the summer. Usually a short thing, maybe one to two weeks and usually in a content area." This comment reflects other low PTE teachers' perceptions that learning is primarily a formal endeavor.

Uses of knowledge

The manner in which individuals use knowledge, as Broudy (1988) states, plays a role in determining if and how that knowledge will later be used in practice. The distinction between high and low PTE teachers according to the aforementioned typology—replicative, applicative, associate, and interpretive modes of knowledge use—afforded interesting comparisons. Each mode of knowledge use was evident for both groups of teachers. However, teachers described using (or intended uses of) knowledge in different ways.

High PTE teachers. Taking an approach to learning that reflected Broudy's allusionary base, high PTE teachers were more likely to describe learning that was interpretive and, at times, associative in nature. For example, high PTE teachers provided detailed descriptions of instances wherein they took knowledge gained in one setting and translated it into useful

knowledge in another—e.g., the classroom. A math teacher described the process of transferring theoretical knowledge into practical classroom situations:

> We had this [graduate school] teacher who I thought was crazy. You would have these discussions, you would say things and he would constantly just ask you what or why. He never seemed to know what he was talking about. Finally, you realized he was doing it on purpose to get us to think. We were discussing using writing in the classroom. We read articles, we got information, we discussed the theory. We actually got assignments where our job was to take it and use it with kids. And then we'd come back and talk about it. The final project was to come up with a project to demonstrate what you've learned. He didn't have guidelines. It made me think and pull together what we had done, and gave me the freedom to do it from the perspective of my classroom.

She continued:

> [The learning] was bridged and I think it was bridged because somehow whatever he did pushed us to think about the connection between the theory and what we're doing in our classroom. In general, pushed us to think. As opposed to a lot of graduate courses where you don't have to think. You just have to learn this and maybe integrate it with this, but it's not something that really challenges your beliefs or gets you to question the way you've thought about things before.

This constant bridging of knowledge occurred in both professional and personal settings, but exemplified these teachers' ability to synthesize and apply new knowledge to problems of practice.

Interpretive and associative uses of knowledge were further evidenced in high PTE teachers' descriptions of their preferences for self-reliant learning experiences. Regardless of the nature of the learning opportunity (i.e., formal or informal, group setting or individual), these teachers focused their learning efforts on making sense of and drawing their own conclusions regarding matters of professional exigency. This teacher described the process this way:

> The number one question I always ask myself is what can I take back to the classroom. Why am I there? It's not just for my personal enjoyment like reading a good book. And just internalizing it for me. I ask what can I take back to the classroom, what's going to make me a better teacher? That's the testing ground. You may tell me a lot of things are going to work, but unless I've tried them out, and willing to work with them I won't know if they work or not—or if they'll work for me.

Finally, teachers' conceptions of professional learning suggested that high PTE teachers described professional learning as a deeply individualized endeavor. In fact, professional learning as described by these teachers was defined by the act of reflection of one's own practice/action on student learning. For example:

> I think what is the best staff development activities that I have ever been involved in have been those people who come in and in some dynamic way make you think about who you are. Not about what you are doing. About who you are, and so then how does that then impact who's in front of you.

Low PTE teachers. Low PTE teachers described their uses of knowledge somewhat differently. While the range of descriptions of knowledge use revealed replicative, applicative and interpretive uses, these teachers described uses of knowledge that were generally limited to

replicative and applicative uses of knowledge. For instance, data suggest that low PTE teachers were focused on building a reserve of replicative and applicative knowledge bits. For instance one teacher described this phenomenon as acquiring "tricks of the trade"—"nuggets" of knowledge that could be inserted into the existing pedagogical repertoire.

> Some nuggets. That's all you need. We have a hundred and eighty school days, but if I got five ideas from each thing that I went to, that would take one class period. how long would it take in my teaching career till I could have the best of the best that I could do? And then alter from that.

While useful and necessary to successful professional practice, an over-reliance on these non-reflective practices as learning strategies does not lead teachers to critical reflections of practice. A case in point, a teacher responsible for teaching reading to limited English speakers described his latest professional development activities to learn how to use film media as an instructional tool in the classroom lacked a clear connection to the needs of his students to learn reading, "Last summer I had one that I thought would be very practical. it was cinematic images of American ethnic minorities. And that was what really taught me about the importance of using film and how I had to use it more and more because my students really didn't read."

Finally, compared to high PTE teachers' tendency to be self-reliant learners, low PTE teachers tended to be more passive, and yet individualistic learners. Therefore, low PTE teachers, who typically defined learning activities as formal professional development, consequently had their learning experiences determined for them by school and district policies and initiatives. For example, this veteran teacher described his disappointment regarding a lack of interesting professional development activities:

> When we started school this year and I saw what was available [for professional development], I thought, 'Gee I'm really not interested in any of the things they're discussing'. It would be very helpful for me to spend the whole day doing what I need to do to get caught up. But I had to choose one or more of the activities.

Discussion

Through the filter of personal teaching efficacy, findings have shown that high and low PTE teachers experienced professional development differently. Bandura's four original sources of efficacy beliefs (mastery learning, vicarious experience, social persuasion, and psychological and emotional states), upon which the concept of PTE rests, provide a useful way to 1) make sense of these findings and 2) suggest implications for practicing school leaders as they contemplate the role and organization of professional development in schools. As Figure 1 shows, Bandura suggests that the four sources of efficacy beliefs influence four primary types of human functioning, which can then reinforce or change efficacy beliefs.

In this study the types of knowledge teachers acquired and used certainly contributed to the manner in which teachers approached their work. Teachers who were operating according to Broudy's allusionary base reflected mastery learning as they transferred valuable knowledge acquired in a variety of contexts to their own practice. This ability to transfer and translate information and lessons learned in one setting to the school or classroom context bolstered high PTE teachers to maintain focus on the primary task of teaching students and to persevere in spite of often difficult environmental challenges. Low PTE teachers, on the other hand, were less likely to exhibit evidence of mastery learning. Instead, through a more limited and concrete vision of professional development, these teachers sought quick fixes, and "theory-less" examples that could

be applied directly into their classroom. Again, while not inherently evil (and indeed often quite useful) this limited view on professional development narrowed teachers' opportunities to learn and inhibited critical reflection on their values, beliefs, and practice.

Perhaps due to the nature of teacher work in high schools, neither group of teachers described modeling as an integral part of their practice. Thus, opportunities for vicarious experience were not widely available, and therefore did not play a significant role in influencing teacher behaviors. The lack of interaction with peers in settings where teachers were actually working in practice (i.e., teaching) together may be less detrimental for high PTE teachers who described opportunities for mastery learning, social persuasion, and personal characteristics that motivated them to learn in spite of their limited opportunities to learn. However, low PTE teachers—who typically described their approaches to learning as narrow and individualistic—might benefit more from opportunities to engage in modeling activities with their peers.

High PTE teachers' motivation to learn was further reinforced by their tendency to work with (and thus observe) and share experiences with their peers. From volunteering to research block scheduling to participating in informal, but content specific, reading groups, many of the high PTE teachers were continuously engaged in professional activities with their peers. These socially persuasive activities were a source of strength and inspiration for teachers that fed their curious intellects while also spurring them on to help their students achieve more and acquire the same passion for learning that they experienced. Unfortunately, most low PTE teachers interviewed had isolated themselves from their peers. This isolation truncated their ability and motivation to experience the persuasive power of professionally oriented social interaction. Instead, these teachers often suffered in silence overwhelmed by their perceptions of the challenges to student

learning and achievement posed by the students' backgrounds, the nature of the school and community environment, and the endless demands placed upon them by their school and district administrators.

Not surprisingly, it appears that high and low PTE teachers' attitudes (i.e., psychological and emotional states) toward their own professional development influenced how and why teachers approached formal and informal learning activities, and their perceptions of those activities. For example, high PTE teachers saw learning opportunities in numerous activities, including administrative duties and committee work. On the other hand, low PTE teacher attitudes toward professional development activities, school and district duties, and principal-teacher interactions as they pertained to professional development suggest a reluctance to reflectively assess one's practice and an unfortunate (but perhaps not unwarranted) feeling of being unduly threatened by a system incapable of meeting individual teacher needs.

Conclusions

In her study, Susan Moore Johnson (1990) observed that teachers exhibited an inexplicable passivity toward, and thus victimization by, formal professional development. Like Johnson's study, this study examined primarily the experiences of excellent teachers. However, this study, while not designed to generalize to the larger population of teachers, does suggest that not all teachers are passive learners. In fact, solely focusing on teachers' formal professional development experiences misses two important facets of teacher learning. First, teachers rely on a host of informal learning strategies to address their classroom needs. In fact, these informal strategies are often the primary learning strategies teachers employ to answer critical questions. And second, their reliance on informal learning strategies that are pushed to the periphery of their

daily practice underscores the persistence of school cultures that militate against the establishment of environments that support student and teacher learning.

Thus, this study suggests that the way teachers experience professional development is more complex than mere disinterest, passivity, or even abhorrence for professional development. Teachers in this study experienced professional development differently depending, in part, on their individual characteristics and attitudes toward professional learning and their profession that do, indeed, appear to act as filters. One of those filters, PTE, appears to be a useful construct that helps understand how teachers experience professional development. More importantly, understanding how PTE influences professional development and their approaches to professional learning also creates opportunities to understand (and apply that understanding) in development professional learning environments that influence PTE. Surely the relationship is not one-way.

Our increased understanding of the relationship between teachers' sense of efficacy and teachers' learning experiences suggests the need for a holistic approach to professional development that encompasses and supports a variety of formal and informal learning opportunities. While one source of efficacy beliefs—psychological and emotional states—may be only indirectly influenced, school leaders can create opportunities for mastery learning, vicarious experience, and social persuasion. By creating learning opportunities that intellectually challenge teachers within a framework of peer support and encouragement, we increase the likelihood that teachers (even those with a low sense of efficacy) will begin to take risks and experiment in ways that lead to higher levels of teaching efficacy. Most importantly, school leaders must recognize that vicarious experiences (such as modeling) and social persuasion are

best achieved through on-going daily or weekly peer interaction. By creating situations where teachers must develop integrated curriculum, team teach, and regularly discuss common students (as occurs in grade level family structures), school leaders can integrate vicarious experiences into teachers' daily work. Social persuasion, the power of positive support, can be attained similarly. For instance, through family structures, school within schools, block scheduling and other arrangements that bring teachers together on a regular basis to discuss practice, teachers who are feeling less efficacious can develop expanded views of their situations and problems, find alternative solutions to challenges, and achieve higher levels of success with their own students.

These types of work arrangements, integrated into the fabric of school life, can create new filters through which teachers view the challenges of their work. As a result of these changed views, teachers become change agents as opposed to passive victims of organizations that fail to feed the intellectual spirit inherent in the majority of teachers, regardless of their levels of efficacy.

Summary

Theories of professional learning in other fields underscore the importance of understanding how various individual characteristics such as career stage, level of expertise, and professional field influence professional learning. While empirical studies in these areas exist in fields such as medicine, law and business, relatively few studies focus on teacher perspectives on professional development (Cervero, 1988). As Cervero (1988) discusses, the type and quality of professional learning that occurs in practice depends, in part, on individual characteristics, including efficacy.

Understanding how teachers experience professional learning is vital to create valuable (and valued) professional learning experiences. Few studies have examined this phenomenon in depth. Those that have typically group teachers by career stage, content area, or not at all. This study began to map teacher learning experiences according personal teaching efficacy and provided insight for future and practicing school leaders as they begin to develop professional development programs that address the needs of all teachers. By understanding the consequences that an individual characteristic such as level of efficacy can have on the way teachers acquire and use knowledge, school leaders have more reason to design professional development in ways that address diverse needs.

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Figure 1: Sources of self efficacy beliefs and Human functions influenced by efficacy beliefs